

IN THE CLAIMS

Please amend the claims as follows:

Claim 1 (Canceled).

Claim 2 (Previously Presented): A synchronous detector that detects timing of scanning by an optical scanner, the optical scanner has a light source that emits a light beam, a deflecting unit that deflects the light beam, a scanning optical element that focuses the light beam deflected by the deflecting unit onto a surface to be scanned, comprising:

a synchronous optical element that focus the light beam deflected by the deflecting unit onto a photoreceiver, wherein the synchronous optical element satisfies a relationship $f_m < f_d$, where f_m is a composite focal length of the scanning optical element in a main scanning direction of the scanning optical element, and f_d is a composite focal length of the synchronous optical element in a main scanning direction of the synchronous optical element, wherein

the synchronous detector comprises a plurality of the synchronous optical elements and a plurality of photoreceivers;

the synchronous optical elements have negative power in the main scanning direction of the synchronous optical element.

Claim 3 (Original): The synchronous detector according to claim 2, wherein a plurality of laser beams travel toward the same synchronous detector, and the synchronous optical elements are arranged so as to focus principal rays of the light beams to a single point in a secondary scanning direction.

Claim 4 (Previously Presented): A synchronous detector that detects timing of scanning by an optical scanner, the optical scanner has a light source that emits a light beam, a deflecting unit that deflects the light beam, a scanning optical element that focuses the light beam deflected by the deflecting unit onto a surface to be scanned, comprising:

a photoreceiver; and

a synchronous optical element that focuses the light beam deflected by the deflecting unit onto the photoreceiver, wherein the synchronous optical element satisfies a relationship $f_m < f_d$, where f_m is a composite focal length of the scanning optical element in a main scanning direction of the scanning optical element, and f_d is a composite focal length of the synchronous optical element in a main scanning direction of the synchronous optical element, wherein

the synchronous optical element is a single lens that is designed such that one surface thereof is a cylindrical surface that is concave in the main scanning direction, and the other surface thereof is a rotationally symmetric surface.

Claims 5-7 (Canceled).

Claim 8 (Previously Presented): An optical scanner comprising:

a light source that emits a light beam;

a deflecting unit that deflects the light beam;

a scanning optical element that focuses the light beam deflected by the deflecting unit onto a surface to be scanned; and

a synchronous detector that detects timing of scanning by an optical scanner, the synchronous detector including

a photoreceiver;

a synchronous optical element that focus the light beam deflected by the deflecting unit onto the photoreceiver, wherein the synchronous optical element satisfies a relationship $f_m < f_d$, where f_m is a composite focal length of the scanning optical element in a main scanning direction of the scanning optical element, and f_d is a composite focal length of the synchronous optical element in a main scanning direction of the synchronous optical element; and

a plurality of the synchronous optical elements and a plurality of photoreceivers, wherein the synchronous optical elements have negative power in the main scanning direction.

Claim 9 (Original): The optical scanner according to claim 8, wherein a plurality of laser beams travel toward the same synchronous detector, and the synchronous optical elements are arranged so as to focus principal rays of the light beams to a single point in a secondary scanning direction.

Claim 10 (Previously Presented): An optical scanner comprising:
a light source that emits a light beam;
a deflecting unit that deflects the light beam;
a scanning optical element that focuses the light beam deflected by the deflecting unit onto a surface to be scanned; and

a synchronous detector that detects timing of scanning by an optical scanner, the synchronous detector including

a photoreceiver; and

a synchronous optical element that focus the light beam deflected by the deflecting unit onto the photoreceiver, wherein the synchronous optical element

satisfies a relationship $f_m < f_d$, where f_m is a composite focal length of the scanning optical element in a main scanning direction of the scanning optical element, and f_d is a composite focal length of the synchronous optical element in a main scanning direction of the synchronous optical element,

wherein

the synchronous optical element is a single lens that is designed such that one surface thereof is a cylindrical surface that is concave in the main scanning direction of the synchronous optical element, and the other surface thereof is a rotationally symmetric surface.

Claim 11 (Canceled).

Claim 12 (Previously Presented): An image forming apparatus comprising a photoreceptor, an optical scanner that optically scans a surface of the photoreceptor, and a synchronous detector that detects timing of scanning of the photoreceptor by the optical scanner, wherein

the optical scanner includes

a light source that emits a light beam;

a deflecting unit that deflects the light beam; and

a scanning optical element that focuses the light beam deflected by the deflecting unit onto a surface to be scanned, and the synchronous detector includes

a plurality of photoreceivers; and

a plurality of synchronous optical elements

wherein

the synchronous optical elements focus the light beam deflected by the deflecting unit onto a photoreceiver, wherein a synchronous optical element satisfies a relationship $f_m < f_d$, where f_m is a composite focal length of the scanning optical element in a main scanning direction of the scanning optical element, and f_d is a composite focal length of the synchronous optical element in a main scanning direction of the synchronous optical element, and

the synchronous detector comprises a plurality of the synchronous optical elements and a plurality of the photoreceivers, wherein the synchronous optical elements have negative power in the main scanning direction.

Claim 13 (Original): The image forming apparatus according to claim 12, wherein a plurality of laser beams travel toward the same synchronous detector, and the synchronous optical elements are arranged so as to focus principal rays of the light beams to a single point in a secondary scanning direction.

Claim 14 (Previously Presented): An image forming apparatus comprising a photoreceptor, an optical scanner that optically scans a surface of the photoreceptor, and a synchronous detector that detects timing of scanning of the photoreceptor by the optical scanner, wherein

the optical scanner includes

a light source that emits a light beam;

a deflecting unit that deflects the light beam; and

a scanning optical element that focuses the light beam deflected by the deflecting unit onto a surface to be scanned, and the synchronous detector includes

a photoreceiver; and

a synchronous optical element that focus the light beam deflected by the deflecting unit onto the photoreceiver, wherein

the synchronous optical element satisfies a relationship $f_m < f_d$, where f_m is a composite focal length of the scanning optical element in a main scanning direction of the scanning optical element, and f_d is a composite focal length of the synchronous optical element in a main scanning direction of the synchronous optical element; and

the synchronous optical element is a single lens that is designed such that one surface thereof is a cylindrical surface that is concave in the main scanning direction of the synchronous optical element, and the other surface thereof is a rotationally symmetric surface.